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UNIVERSITI SAINS MALAYSIA

1<sup>st</sup>. Semester Examination  
2004/2005 Academic Session

October 2004

**EAP 584/4 – Environmental Impact Assessment**

Duration : 3 hours

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**Instructions to candidates:**

1. Ensure that this paper contains **FOUR (4)** printed pages before you start your examination.
2. This paper contains **SIX (6)** questions. Answer **FIVE (5)** questions only. Marks will be given to the **FIRST FIVE (5)** questions put in order on the answer script and **NOT** the **BEST FIVE (5)**.
3. All questions carry equal marks.
4. All questions **MUST BE** answered in English.
5. Each question **MUST BE** answered on a new sheet.
6. Write the answered question numbers on the cover sheet of the answer script.

1. (a) Discuss any **THREE (3)** of the following terms in the context of EIA:-

- i) monitoring
- ii) residual impacts
- iii) public involvement
- iv) Matrix method of analysis

(9 marks)

(b) Table 1 listed the results of water quality analysis of a water sample and noise monitoring during construction phase.

- i) Give comments on the water quality results and noise level
- ii) Give **ONE (1)** mitigation method for each water quality parameter so that each parameter will improved and comply to the Standard.
- iii) Give **ONE (1)** mitigation method to improve the noise level in the evening

**Table 1**

Parameters	Before Project	During construction of Project
Coliform Bacteria, MPN/100mL	250	9,400
Colour, Hazen units	20	50
SS, mg/L	50	500
Turbidity, NTU	20	200
Noise, dBA (in the evenings)	35	65

(11 marks)

2. (a) Environmental Contingency Plan must be included in EMP.

Describe the following:

- i) the meaning
- ii) the objectives and reasons to be included
- iii) the elements required in the Emergency Plan

(10 marks)

(b) Discuss the followings:

- i) Environmental audit
- ii) Environmental training

(10 marks)

3. (a) Choose only **one** project type. Lists and discuss **TEN (10)** expected impacts to the environment from a list of project type below. Impacts should be divided into phases of any typical projects. Each of the project have dimension which make Detailed Impact Assessment Mandatory.

Project types:-

- i) Municipal Solid Waste or Sewage Treatment and Disposal
- ii) Toxic and Hazardous Waste Treatment and Disposal
- iii) Crude Palm Oil Industry
- iv) National Highway

(10 marks)

- (b) Describe mitigating measures for each of the identified impacts.

(10 marks)

4. A major new township development with total area of 888 hectare is expected to boost the economy of Perlak state. It will involve relocation of 500 families from three effected aborigine people villages. This project will cause two major water catchments area for Perlak State to be affected. Perlak has five catchments areas for water supply of 100,000 citizens. As the project is economically driven rather than environmentally, the environmental pressure groups are against the project approval. The rulers of Perlak state would want an Environmental Impact Assessment to be carried out within 3 months to prove that the project will be beneficial if the mitigating measures are good. However, to have good mitigating measures the impacts should be properly predicted.

Choose methods of predictions for **TWO (2)** impacts from the lists below.

- i) air quality impact
- ii) social impact
- iii) ecological impact
- iv) noise quality impact
- v) traffic impact
- vi) surface water impact
- vii) ground water impact
- viii) geotechnical impact
- ix) soil

(20 marks)

5. (a) Describe major factors to be considered during decision making process for the significance of any environmental impact.

(12 marks)

- (b) Explain the possible assessment decisions that could be made when using all the factors above.

(6 marks)

5. (c) Decide whether the factors in (a) should be dealt with, in synergistic effect or in isolation.

(2 marks)

6. (a) A weighted rating approach to site selection for the construction of an impounding reservoir may be used based on the criteria such as pollution, nature conservation and social acceptability. Based on these criteria, discuss the related issues that may be involved and need to be addressed for the impounding reservoir project.

(10 marks)

- (b) Discuss about the virtue of public participation in dealing with the public denial of a project. Describe the way that public participation must be included in Detailed Assessment. Then, explain the mechanism for public participation to be carried out.

(10 marks)

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